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SALMON MARKING REVEALS MIGRATION COURSE

P. A. Dyvinn

To ascertain the waterways used by anadromous salmon (going to spawn along Sakhalin shores, in 1947 the Sakhalin branch of the TINRO (Pacific Ocean Scientific Research Institute of Fish Economy and Oceanography) carried out a plan to mark mature humpback salmon (*Oncorhynchus gorbusha*). The marking was done in the fixed seine in Antonova in the Yablochnyy Fish Combine region.

A bright red four-cornered marker ($1\frac{1}{2} \times 2\frac{1}{2}$ centimeters) was quickly fastened to the tail by a thin copper wire. Turned loose into the sea, the fish headed as was expected, in the direction of Tatarsky Straits. Of the 500 fish marked, only one returned to the area where the marking had been done. The remaining marked salmon were caught outside the marking area.

At the appropriate time the fishermen were informed of the need to mark fish. As a result, it was possible to gather from the industrial catches 68 marked humpback salmon, constituting 13.6 percent of the marked fish. Of these, 75 percent had migrated southward and 25 percent northward along the western shore of Sakhalin. Of these 68 marked fish 67 were caught in ocean fishing areas and only one in a river.

Similar results were obtained in 1938 when Japanese research workers marked humpback salmon migrating along the western shores of the southern half of Sakhalin Island. It was found that about 70 percent of the marked fish caught had migrated south of the marking area and about 30 percent to the north. A few fish were caught in the area where the marking had been done.

In both cases the largest number of marked fish was caught in the areas just north and especially just south of the marking area. In addition to this, in 1947, four marked fish were caught in Aniva Bay and one along the eastern shore of South Sakhalin, in the area of the old Starodub Fish Combine. Exactly the same thing occurred in 1938 when one marked humpback salmon was caught in

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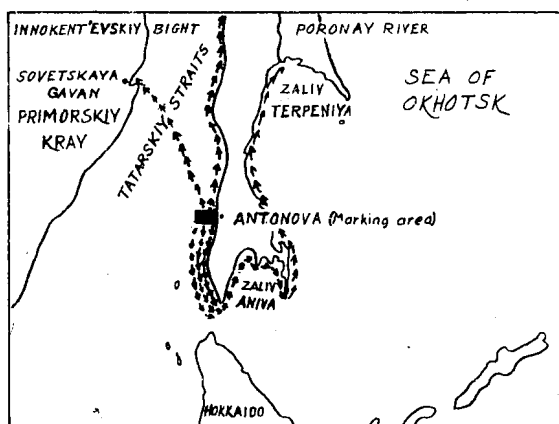
Zaliv Terpeniya (Taraika Bay) in the Poronay River. Judging by rather questionable information, it is believed that in 1947, individual marked salmon were caught in fixed seines in the northern half of Sakhalin. However, this cannot be proved as the markings on the fish were lost.

It should be especially noticed, however, that one marked humpback salmon was caught at Innokent'evskiy Bight, slightly south of Sovetskaya Gavan', in Primorskiy Kray, a considerable distance from Sakhalin waters. On the basis of the facts presented, it is possible to deduce the following preliminary results.

The clearly defined tendency of the majority of marked humpback salmon to migrate in a direction south of the marking area shows that along the western shores of South Sakhalin, part of the school of fish migrate to the spawning rivers of Aniva Bay, part to the eastern shores of Zaliv Terpeniya, and part, undoubtedly, to the spawning rivers along the western shores of North Sakhalin.

The catching of marked salmon in Primorskiy Kray (Innokent'evskiy Bight) off the eastern Sakhalin shore, and in Zaliv Terpeniya indicates that humpback salmon complete a very long journey during the migration period prior to spawning. From the marking area alone the salmon swim a distance up to 700 kilometers, going through the Japanese and Okhotsk seas. There is a possibility that along the western shores of South Sakhalin there may be found migrating humpback salmon going to spawn in rivers in Primorskiy Kray.

Thus, along the western shore of South Sakhalin, the migratory school of fish is comprised largely of humpback salmon going to other, more distant rivers to spawn. This fact is further substantiated by the physical condition of the salmon at this time (increased appetite and immature gonads) and the absence in this region of any important anadromous fish.



MIGRATION OF HUMPBACK SALMON
ALONG SHORES OF SOUTH SAKHALIN

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